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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,063	12/21/2001	Barret Lippey	02103-406001 / AABOSS32	2927
26161	7590	05/06/2004	EXAMINER MAHONEY, CHRISTOPHER E	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			ART UNIT 2851	PAPER NUMBER

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n N .	Applicant(s)	
	10/028,063	LIPPEY ET AL.	
	Examiner	Art Unit	
	Christopher E Mahoney	2851	

-- The MAILING DATE f this communication appears on the cover sheet with the c rrespond nce address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20,24,26,29-31,33-53,57-62 and 64-74 is/are pending in the application.
- 4a) Of the above claim(s) 33-40 and 42-50 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-16,24,26,29,41,51-53,57,59-62 and 65-68 is/are allowed.
- 6) ☒ Claim(s) 17-20,30,31,58,64 and 69-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

Claims 11-16, 24, 26, 29, 41, 51-53, 57, 59-62, and 65-68 are allowed.

Response to Arguments

Applicant's arguments filed December 29, 2003 have been fully considered but they are not persuasive.

The applicant once again traverses the restriction requirement. The **restriction** was made **final** in the previous Office Action mailed June 30, 2003. The applicant has the right to petition the restriction requirement. The examiner once again notes that rejoinder can be discussed upon incorporation of allowable subject matter in the claims.

The applicant has addressed the objections to the drawings. With respect to the objection of showing a room embracing a projector but no indication of reduced energy in predetermined wavelengths, figure 12 shows a room embracing a projector but no indication of reduced energy in predetermined wavelengths. The applicant is not required to include a legend quoting the specification verbatim. Such a legend would still not actually depict what is claimed, but describe it verbally in a drawing. It is unclear how the applicant envisioned such a reduction in energy. If the light source for the room is a special bulb, perhaps it could be depicted in figure 12 or a separate figure. If the room lighting is filtered, that could be depicted in figure 12. Alternatively, the applicant could include a figure depicting the ambient light conditions for the room (something similar to any of figures 3, 4, 6 and 9).

The applicant's arguments regarding the rejection of claim 10 under 35 USC 112 is moot in light of the fact that claim 10 is canceled.

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The rejection of claims 16 under 35 USC 112 is repeated. The applicant argues that claim 16 particularly points out and claims the range of approximately 5 to 50 layers to form a coating of thickness in the range of approximately 1000 to 6000 nm and that courts have held that the term “substantially equal” does not necessarily render claims indefinite. As the applicant is aware, each case must be assessed on its own merits. Additionally, the term “substantially equal” is not at issue in the present application. The examiner could interpret substantially equal to mean for example, equal but for tolerances in manufacturing (for that particular art). The present case claims approximately 5 to 50 layers and approximately 1000 to 6000 nm. The examiner can not determine what the applicant considers this to encompass. If it is the applicant’s position that one of ordinary skill in the art would know what is being claimed, surely the applicant, being one of ordinary skill in the art if not extraordinary skill, could explain what approximately 5 to 50 layers and approximately 1000 to 6000 nm encompasses.

The applicant goes on to explain that claim 16 does not restrict the layers to consisting of only low index of refraction material and high index of refraction material and references figure 7. The applicant should note that the claim recites that the multilayer interference coating has these layers. Figure 7 depicts a dichroic filter which the examiner believes is the multilayer interference coating and several other layer. Page 6 of the specification actually refers to figure 2 when discussing the multilayer interference coating. The specification clearly states the multilayer interference coating is a dichroic coating. The only way the examiner can perceive that the layers in figure 7 other than the dichroic filter can be perceived as part of the filtration (say the polarization layer) is if an alternative method to a multilayer interference coating were being used. If the applicant insists that the multilayer interference coating may comprise more

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than the low index of refraction and high index of refraction materials, the applicant is respectfully requested to point out where in the specification this is discussed and disclosed. Additionally, elaboration of figure 7 is requested. Which layers comprise the multilayer interference coating so as to possibly make it a thickness greater than if just low index of refraction and high index of refraction materials were used?

The originally rejection of claim 20 under 35 USC 112 has been overcome. Claim 20 is now rejected under 35 USC 112 based on the amendment to claim 20.

The rejection of claims 17-19 is traversed on the grounds that there is no motivation to combine. The subject matter of both Takayama and Goto are for projection screens. The motivation to use the features is expressed in the rejection, to control the viewing angle. Goto states this as a goal in reciting “to obtain a desired angle of visibility”.

The rejection of claims 20 and 30-31 is traversed on the grounds that there is no motivation to combine. The subject matter of both Takayama and Braun are for projection screens. The motivation to use the features is expressed in the rejection, to yield high contrast without requiring darkened ambient conditions. Braun states this as a goal in reciting “yields high contrast without requiring darkened ambient conditions”.

The rejection of claim 58 is traversed on the grounds that there is no motivation to combine. The subject matter of both Takayama and Mihalakis are for projection screens. The motivation to use the features is expressed in the rejection, to have a definitely controllable field through which incident radiation is redistributed, uniform radiance throughout such field, high efficiency due to a definite separation of the field of redistribution from the environmental field and due to minimum absorption losses at the redistributing surface of such devices, and a

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favorable rejection of radiation impinging on the device from sources other than those intended for irradiating the device. Mihalakis states this as a goal in reciting “a definitely controllable field through which incident radiation is redistributed, uniform radiance throughout such field, high efficiency due to a definite separation of the field of redistribution from the environmental field and due to minimum absorption losses at the redistributing surface of such devices, and a favorable rejection of radiation impinging on the device from sources other than those intended for irradiating the device.” Claim 58 does not recite a preshifted coating.

The rejection of claim 64 is traversed on the grounds that there is nothing in the reference to suggest modifying a projector using non UHP bulbs to the specific wavelengths of light. The examiner first notes that claim 64 is incomplete and indefinite as now amended. The Takayama reference teaches that the screen is matched with the output light of light from the projector, and in particular to only reflect red green and blue. If one had a projector which projected only specific wavelengths of red green and blue which was not a projector utilizing a UHP bulb, say a laser projector for example, and read the Takayama patent, they would not go out and buy a projector with a UHP bulb and match the screen to that. Instead they would match the screen to a projector they already had. It makes sense economically.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ambient lighting having reduced energy in a predetermined number of wavelengths must be shown or the feature(s) canceled from

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the claim(s). No new matter should be entered. Figure 12 shows a room embracing a projector but no indication of reduced energy in predetermined wavelengths.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16, 20, 64, and 71-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear in claim 16 what applicant means by approximately 5 to 50 layers. For example, does this encompass 2 layers? Furthermore, it is unclear how a *multilayer interference* coating of 60,000nm may be obtained from 50 layers each about 200nm thick (100nm+70nm). At best this equals a total thickness of around 10,000nm.

It appears in claim 20 that the term “selected ranges” is either superfluous or that it is supposed to be “of optical wavelength regions.”

Claim 64 recites “to reflect only incident optical,” without reciting optical what. Additionally, there is a lack of antecedent basis for “said narrow bands”.

Claims 71-72 depend from canceled claims.

Regarding claims 17-19 the applicant has requested where the references suggest

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 73 is rejected under 35 U.S.C. 102(b) as being anticipated by Goetz et al. (WO97/01610). Goetz teaches an adhesive (abstract, line 1) for use in a projection screen (page 1, line 7) wherein said adhesive is arranged to diffuse light (abstract, line 1). The applicant is directed to review the abstract, page 1, line 7, page 2, lines 15-21, and page 8, lines 11-14.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goetz et al. (WO97/01610) in view of Abe (U.S. Patent No. 6,307,675). Goetz teaches the salient features of the claimed invention except for the glass fibers. Abe teaches in col. 8, line 27 that it was known to provide glass fibers in light diffusing material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Abe for the purpose of improving strength.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Goto (U.S. Patent No. 6,023,369). Takayama teaches a selective reflective optical apparatus comprising a projection screen (figs. 1, 8) having a structure constructed and arranged to selectively reflect only incident optical energy of a predetermined number of narrow bands of optical wavelengths regions (figs. 6, 9). A multilayer interference layer RS, GS, BS (col. 2, line 55) reflects light in the selected bands and passes other light. (col. 2, lines 54-56). The selected bands are approximately red, green, and blue (col. 2, line 59). [The applicant should note that since only approximately red, green, and blue any teaching of red, green and blue meet the claims reciting approximate color.] A light absorbing material SBL absorbs light energy within the regions between regions other than the narrow bands. (See col. 2, line 23 and col. 3, lines 6-9.) A projector P projects light in frequency regions corresponding to the narrow bands (fig. 3 and col. 3, lines 32-39). Takayama teaches the salient features of the claimed invention except for a diffusion element comprised of lenticular elements which diffusion having a greater span in the horizontal than in the vertical. Goto teaches that it was known to provide a lenticular pattern 93 on the exit surface of a reflection screen to provide diffusion having a greater span in the horizontal than in the vertical. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Goto for the purpose of effectively utilize the reflected image light by controlling view angle.

Claims 20 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Braun (U.S. Patent No. 5,335,022). Takayama teaches the salient features of the claimed invention except for a linear polarizer on said

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projection screen and synchronization with polarization from a projector. Braun teaches that it was known to provide a linear polarizer on said projection screen and synchronization with polarization from a projector. The applicant is directed to review the abstract as well as col. 7, lines 22-30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Braun for the purpose of yielding high contrast without requiring darkened ambient conditions.

Claims 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of De Palma (U.S. Patent No. RE29091). Takayama teaches the salient features of the claimed invention except for preshifted front or curved screen to compensate for the angle of incidence of light upon the screen. Figure 3 of DePalma teaches preshifted front, figure 4 shows the resultant distribution of light, and figures 18 and 19 show that the screen may be curved. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by De Palma for the purpose of a definitely controllable field through which incident radiation is redistributed, uniform radiance throughout such field, high efficiency due to a definite separation of the field of redistribution from the environmental field and due to minimum absorption losses at the redistributing surface of such devices, and a favorable rejection of radiation impinging on the device from sources other than those intended for irradiating the device.

Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083). Takayama teaches the salient features of the claimed invention except for optimizing the wavelength ranges of said narrow bands for non-UHP bulbs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the

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wavelength ranges of said narrow bands for non-UHP bulbs for the purpose of using projectors which do not utilize a UHP bulbs. For example, a laser projector may be used. The applicant should also note that it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Goetz et al. (WO97/01610). Takayama teaches the salient features of the claimed invention except for the diffusive adhesive. Goetz teaches that it was known to use diffusive adhesives in projection screens. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Goetz for the purpose of providing diffusion without the need for a separate diffusion layer which needs to be bonded to the rest of the screen.

Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Goetz et al. (WO97/01610) and further in view of Abe (U.S. Patent No. 6,307,675). Takayama in view of Goetz teaches the salient features of the claimed invention except for the glass fibers. Abe teaches in col. 8, line 27 that it was known to provide glass fibers in light diffusing material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Abe for the purpose of improving strength.

Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks (U.S. Patent No. 5,193,015) in view of Moshrefzadeh (U.S. Patent No. 6,449,089). Shanks teaches the salient features of the claimed invention except for the diffusive adhesive. Moshrefzadeh teaches

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that it was known to use diffusive adhesives in projection screens. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Moshrefzadeh for the purpose of providing a thin diffusion layer.

Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks (U.S. Patent No. 5,193,015) in view of Moshrefzadeh (U.S. Patent No. 6,449,089) and further in view of Abe (U.S. Patent No. 6,307,675). Shanks in view of Moshrefzadeh teaches the salient features of the claimed invention except for the glass fibers. Abe teaches in col. 8, line 27 that it was known to provide glass fibers in light diffusing material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Abe for the purpose of improving strength.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

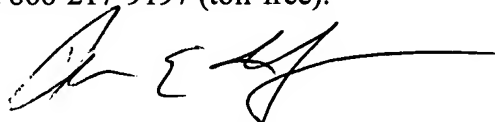
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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E Mahoney whose telephone number is (571) 272-2122. The examiner can normally be reached on 8:30AM-5PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (571)272-2112. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher E Mahoney
Primary Examiner
Art Unit 2851